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Remarks

Claims 1-46 are pending. Claims 1-15 have been canceled. Claims 45 and 46 have been withdrawn from consideration. Thus, claims 16-44 remain under consideration.

Claims 28, 31 and 35 are amended. Claim 28 has been amended to recite the subject matter claimed in completely independent form; claim 35 has been amended to correct a typographical error. No new matter is introduced by these amendments. Claim 31 has been amended to add the step of shrinking the shrinkable substrate. Support for this amendment may be found throughout the specification, for example, from page 14, line 9 through page 15, line 24. Accordingly, no new matter is introduced by the amendment to claim 31.

Double Patenting Rejections

Claims 1-30 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 6,395,483 ("Patil") in view of Minehan (claims 1-5, 9-20, and 24-30), Feast (claims 6 and 21), or Minehan further in view of WO 99/533191 ("Halverson," claims 8 and 23).

Claims 1-5, 9-20, 24-35, and 40-44 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-43 of copending U.S. Patent Application Serial No. 10/060794, issued as U.S. Patent No. 6,573,338 on June 3, 2003, in view of Minehan.

Additionally, claims 8 and 23 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-43 of copending U.S. Patent Application Serial No. 10/060794, issued as U.S. Patent No. 6,573,338 on June 3, 2003, in view of Minehan in further view of Halverson.

Claims 1-15 have been canceled. Of the remaining claims rejected under the judicially created doctrine of obviousness-type double patenting, only claims 16, 28, and 31 are independent.

MPEP § 804 states that an obviousness-type double patenting rejection is analogous to a failure to meet the nonobviousness requirement of U.S.C. § 103 except that the patent principally underlying the double patenting rejection is not considered prior art. Therefore, any analysis employed in the obviousness-type double patenting rejection parallels the analysis of a 35 U.S.C. § 103(a) determination. The same section of the MPEP further states:

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Any obviousness-type double patenting rejection should make clear:

(A) The differences between the inventions defined by the conflicting claims - a claim in the patent compared to a claim in the application; and

(B) The reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim in issue is an obvious variation of the invention defined in a claim in the patent.

MPEP § 706.02(j) states that to establish a *prima facie* case of obviousness, three basic criteria must be met:

- (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference(s) or combine the reference teachings;
- (2) there must be a reasonable expectation of success; and
- (3) the prior art reference (or references when combined) must teach or suggests all of the claim limitations.

Moreover, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on Applicants' disclosure.

Applicants respectfully submit that the Office Actions fails to establish a *prima facie* case of obviousness for each of the independent claims: claim 16 (as originally filed), and claim 28 and claim 31 (each as amended herein). Accordingly, Applicants submit that each of claims 16, 28, and 31 are patentable, and that all claims depending from claims 16, 28, or 31 also are patentable.

Claim 16 recites an article comprising a polymeric substrate and an electrically conductive coating disposed on at least a portion of the substrate and having a projected surface area and a topographical surface area wherein the topographical surface area is greater than the projected surface area. Claim 16 stands rejected as unpatentable over claims 1-3 of U.S. Patent No. 6,395,483 ("Patil") or, alternatively, claims 1-43 of copending U.S. Patent Application Serial No. 10/060794 ("the '794 application"), in either case in view of Minehan. Patil claims any array comprising a shrunken polymeric substrate, a mask layer, and reactants affixed to the substrate. The '794 application claims methods of manufacturing arrays. The claims of neither Patil nor the '794 application are drawn to arrays having an electrically conductive coating.

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The Office Action states that Minehan teaches polypyrrole coating of films for DNA binding. The Office Action then suggests that one of ordinary skill in the art would have been motivated to apply the electrically conductive polypyrrole to the array of Patil or the array manufactured according to the claims of the '794 application in order to provide a unique surface for DNA binding.

Applicants respectfully disagree with the characterization of Minehan provided in the Office Action and, therefore, also the suggestion that one of ordinary skill in the art would have been motivated to combine the teachings of Minehan with the claims of either Patil or the '794 application. Minehan *does not* teach a polypyrrole coating of films as suggested in the Office Action. Rather, Minehan teaches polymerization of free-standing solid polypyrrole substrates (see, e.g., the first sentence of the carryover paragraph from page 777 to 778, and the third paragraph of the Experimental Section, page 778). Minehan provides no motivation to coat substrates with polypyrrole. Each of Patil and the '794 application describe coated arrays, but neither reference teaches or suggests (a) electrically conductive coatings in general, or (b) polypyrrole coatings in particular. Therefore, Applicants respectfully assert that one of ordinary skill in the art would *not* have been motivated to incorporate the solid, free-standing polypyrrole film of Minehan into the arrays of Patil or the '794 application as an electrically conductive coating.

Moreover, even if, for the sake of argument, one of ordinary skill in the art would have been so motivated, the cited references would not have provided a reasonable expectation of success. Each of Patil and the '794 application teaches arrays with coatings that are preferably from about 0.1 μ m to about 10 μ m thick (see, e.g., Patil, column 12, lines 31-46) and warn that coatings that are too thick may delaminate from the substrate because of high flexural rigidity of the thick coating. Minehan teaches polymerization of a film 50 μ m thick - five-fold greater than the upper limit of the preferred coating thickness described in Patil and the '794 application. One of ordinary skill in the art, even if motivated to consider incorporating a polypyrrole coating to an array of Patil or the '794 application, would not have had a reasonable expectation that the Minehan film could be used as a coating according to the teaching of Patil or the '794 application. In fact, one of ordinary skill in the art would have concluded that the film of Minehan would be too thick to be useful as a coating for the arrays of Patil and the '794 application. One of ordinary skill in the art would not have had a reasonable expectation that a

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polypyrrole film of Minehan, if incorporated into an array of Patil or the '794 application as an electrically conductive coating, would successfully maintain its (a) structural integrity, (b) electrical conductivity, and/or (c) DNA binding character, upon shrinking the substrate to provide the difference between projected surface area and topographical surface area recited in claim 16.

Applicants assert that a *prima facie* case of obviousness has not been established for claim 16. Because each of claims 17-27 depends, directly or indirectly, from claim 16, Applicants assert that each of claims 16-27 is patentable.

Claim 28 recites an array comprising an article that comprises a polymeric substrate and an electrically conductive coating disposed on at least a portion of the substrate, the electrically conductive coating having a projected surface area and a topographical surface area wherein the topographical surface area is greater than the projected surface area (the article of claim 16), and one or more reactants affixed to the electrically conductive coating. The array of claim 28 is therefore, patentable for at least all of the reasons provided above regarding the patentability of claim 16. Because each of claims 29 and 30 depends from claim 28, Applicants assert that each of claims 28-30 is patentable.

Claim 31 has been amended to recite a method of making a coated article, the method comprising: providing a shrinkable polymeric substrate; coating at least a portion of the polymeric substrate with an electrically conductive coating; and shrinking the substrate. Claim 31 stands rejected as being unpatentable over the method claimed in the '794 application in view of Minehan. Applicants submit that one of ordinary skill in the art would not have (a) been motivated to apply the polypyrrole film of Minehan to an array manufactured according to the claims of the '794 application, or (b) had a reasonable expectation of success, for at least all of the reasons stated above regarding the patentability of claim 16-30. Each of claims 32-35 and 40-44 depends, directly or indirectly, from claim 31 and, therefore, is patentable for at least all of the reasons set forth above regarding the patentability of claim 31.

Applicants submit that the Office Action has failed to establish a *prima facie* case of obviousness in support of the obviousness-type double patenting rejections asserted against the independent claims that remain under consideration, claims 16, 28, and 31. Each of claims 17-27 depends from claim 16; each of claims 29 and 30 depends from claim 28; and each of claims 32-35 and 40-44 depends from claim 31. Reconsideration and withdrawal of the rejection of claims

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16-35 and 40-44 under the judicially created doctrine of obviousness-type double patenting is respectfully requested.

§ 103 Rejections

Claims 1-44 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over WO 99/53319 ("Halverson") in view of Minehan (claims 1-5, 8-20, 23-36, and 40-44) or Halverson in view of Minehan in further view of Feast (claims 6, 7, 21, 22, 37 and 39). Of the claims so rejected, claims 16-44 remain under consideration, of which claims 16, 28, and 31 are the only independent claims.

The teachings of Halverson are identical to the teachings of the '794 application discussed above. Accordingly, Applicants submit that claims 16, 28, and 31 are patentable with respect to 35 U.S.C. § 103(a) for at least all of the reasons set forth above regarding the patentability of the same claims with respect to the obviousness-type double patenting rejection based on the '794 application. Each of claims 17-27 depends from claim 16; each of claims 29 and 30 depends from claim 28; and each of claims 32-35 and 40-44 depends from claim 31. Reconsideration and withdrawal of the rejection of claims 16-35 and 40-44 under 35 U.S.C. § 103(a) is respectfully requested.

Conclusion

In view of the above, Applicants submit that the application is in condition for allowance. Reconsideration of the application and allowance of claims 16-44 is respectfully requested.

Respectfully submitted,

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